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ra, Mucor; (3) The Egg-spore Plants (Oosporeæ), *Cedogonium*, *Vaucheria*, *Peronospora*, *Cystopus*, *Fucus*; (4) The Red Seaweeds and their allies (Carposporeæ), *Podosphæra*, *Eurotium*, *Parmelia*, *Puccinia*, *Agaricus*; (5) The Mosses and their allies (Bryophyta), *Marchantia*, *Mnium*; (6) The Ferns and their allies (Pteridophyta), fern prothallia and fruiting, *Pteris*, *Polypodium*, *Selaginella*. III. *The Structure and Physiology of Phanerogams*.—The structure of Gymnosperms; the sexual reproduction of Monocotyledons; the sexual reproduction of Dicotyledons.

**Notes.**—Those who have had the pleasure of seeing that lovely tree, the *Magnolia grandiflora*, in bloom in its native haunts, and who live north of Maryland, must have ceaseless regret that it is not generally hardy in their district. A few trees live and bloom in sheltered situations above the state mentioned. A single specimen in this city (Wilmington, Delaware) blooms freely nearly every year. Through the kindness of the owner, J. H. Jackson, Esq., I am enabled to give the following record of the period of its flowering for the years mentioned. The dates given are of the first and last flowers and show the *period* of flowering to be much longer than might be supposed; of course much the greater number of flowers appear during the first four weeks.

1873,	from June 20 to _____.
1874,	“ June 22 to August 19.
1875,	“ June 21 to August 5.
1876,	“ June 11 to August 10.
1877,	“ June 11 to August 1.
1878,	“ May 30 to August 22.
1879,	“ June 9 to August 17.
1880,	“ May 28 to _____.

1881, tree survived the excessive cold of last winter and bloomed, but less freely than usual. No record has been kept since the last date mentioned.

THE PENINSULA between Delaware and Chesapeake bays has generally a light, rather thin sandy soil, which does not differ materially from that mostly prevalent in the Atlantic coast region from Long Island southward. Yet it produces some noble forests of both evergreen and deciduous trees. Some of your readers may remember the splendid specimens of black walnut and tulip trees, shown at the Centennial Exhibition by the Delaware State Commission. These were respectively 7 and 9 feet through and were perfectly sound and solid. While in Southern Delaware, some months since, I measured a Cypress (*Taxodium*) stump, 9 feet across. A Post Oak (*Quercus stellata*) measured 16 feet in circumference at 3 feet from the ground. *Pinus Teda* and *Pinus mitis* attain a height of 100 feet and a girth of 10 to 14 feet. Even *Pinus inops* which is usually considered a low and straggling tree, was seen at least 60 feet in height. Some specimens of *Alnus maritima* (a species perhaps exclusively found in this district) may well rank as trees. Here are measurements of three individuals.

No. 1, 25 feet high, 13 inches in circumference near base.

No. 2, 32 feet 8 inches high, 13 inches " "

No. 3, 31 " 1 inch " 16 " " "

THE MISTLETOE is frequent in this region and always, so far as I have observed, found on *Nyssa multiflora* or *Acer rubrum*. In last September it was seen in fine fruit and also in full flower. The books which I can consult, give the flowering period as April or May. This, I believe, is correct in the far south. Can it be that in more northern localities it flowers in the fall and perfects its fruit the next year, as is the case with *Hamamelis* and *Alnus maritima*? I should be glad to have information upon this point.—WM. M. CANBY.

**Calamagrostis Howellii, n. sp.**—Culms densely tufted, 10-20 inches high, erect, or somewhat geniculate below, smooth; radical leaves loosely setaceous involute, firm but not rigid, in length nearly equalling or even exceeding the culm, ligule conspicuous, about  $1\frac{1}{2}$  lines long, scarious, culm leaves about 3, narrow or filiform, 4 to 8 inches long, the upper one equalling the culm; panicle pyramidal, 2 to 4 inches long, loose and spreading, rays mostly in fives, lower ones 1 to  $1\frac{1}{2}$  inches long, numerous flowered above the middle; spikelets pale green or purple tinged, outer glumes lanceolate, acute,  $2\frac{1}{2}$  to 3 lines long, nearly equal, membranaceous, 1-nerved or the upper indistinctly 3-nerved, flowering glume slightly shorter than the outer ones, ovate-lanceolate, acute, 4-nerved above, the apex with 2 mucronate pointed teeth, the conspicuous strong awn inserted about the lower third, half an inch long, pale rather shorter than its glume, bidentate at the apex, basal hairs about half as long as the flower, those of the rudiment rather longer.

A well marked and handsome species, remarkable for the long setaceous leaves, both radical and cauline, and for the open panicle and conspicuous awns. It is named for the discoverer, *T. J. Howell*, Oregon.—GEO. VASEY.

**Blight.**—Editors BOTANICAL GAZETTE:—Please permit me to call the attention of your readers who are adepts in the use of the compound microscope, to the subject of disease in plants by *bacteria*. Last year accounts of my own investigations were published in the transactions of the American Association for the Advancement of Science, Scientific American, American Naturalist, and elsewhere. These had special reference to the so called "fire blight" of the pear and "twig-blight" of the apple tree. Some much more limited studies upon the "yellows" of the peach were also published in "Science." The proofs offered in these accounts were such as:—

1. The uniform presence of a certain species of *Bacterium* in the dying tissues.

2. The appearance of the disease upon inoculating healthy limbs with this *Bacterium*.

3. The observed multiplication of the organism and the gradual spread of the disease from the point of inoculation.

The results fully convinced me that these diseases of our orchard trees are directly due to the operations of this minute cryptogamic